Report Date: 02 Feb 2013

Summary Report for Individual Task
031-504-1004
Operate the Improved Chemical-Agent Monitor (ICAM)
Status: Approved

Condition: You are given an ICAM and Technical Manual (TM) 3-6665-343-10. You are in the appropriate mission-oriented protective posture (MOPP) level. The order has been given to perform monitoring procedures for personnel and equipment in a potentially contaminated area. This task is always performed in MOPP.

Standard: Operate the ICAM by performing monitoring procedures for personnel and equipment that includes preparing the ICAM for operation and movement.

Special Condition: None

Special Standards: None

Special Equipment: None

MOPP: Always

Task Statements

Cue: None

DANGER

None

WARNING

None

CAUTION

None

Remarks: None

Notes: None

Performance Steps

1. Prepare the ICAM for operation.

a. Perform before-operation, preventive-maintenance checks and services (PMCS).

(1) Inspect ICAM for broken and/or cracked case. Inspect outside of ICAM for dirt, corrosion, distortion, and cracked, broken, and/or missing parts including nozzle protective cap assembly, display, battery cap assembly, environmental cap, and two push-button switches with rubber covers.

(2) Twist (counterclockwise) and remove battery cap assembly. Inspect that a battery is installed in receptacle. (If no battery, perform the procedures in steps 8 and 9 TM page 2-9).

(3) Check that spare battery is in carrying harness pocket. Inspect battery for cracks, dents, bulging, and corrosion.

(4) Check that confidence sample is in carrying harness pocket. Remove confidence sample from pocket and inspect for cracks, breakage, or other damage. Check that plunger goes up and down for both modes. Return confidence sample to harness pocket.

(5) Inspect packing can to ensure no punctures.

Note: Do not open the packing can until a spare nozzle protective cap is required.

(6) Inspect for cracked, broken, or missing parts. (Some ICAMs have the buzzer shown below left. Newer ICAMs have buzzer on the right.)

(7) Inspect the battery, assembly, training (BAT) for dirt and cracked, broken, or missing parts. Remove all dirt from the BAT prior to use.

b. Perform a self-test.

(1) Ensure that the nozzle protective cap is in position on the monitor case assembly.

(2) Press the ON/OFF push-button switch.

Note: If the ICAM display does not come on, disappears, or flashes on and off, refer to troubleshooting symptoms 3 and 4 (TM page 2-23). Otherwise , observe the display for the following indications:

(a) H mode is shown. If the G mode is shown, press the G/H mode push-button switch. Turn the ICAM off and then on again. Verify that the H mode is shown. If the H mode is not shown, refer to the troubleshooting symptom 5 (TM page 2-24).

(b) Markers A and B are shown.

(c)) All eight bars are shown.

(d) Three vertical dots are shown.

(e) BL is shown.

(f) WAIT is shown.

Note: If any display indicator is not shown, refer to the troubleshooting symptom 10 (TM page 2-24).

(g) Display will clear from self-test after 30 seconds (H mode, WAIT and A and B markers remain). If display does not clear from self-test after 30 seconds, refer to troubleshooting symptom 11 (TM 2-25).

(h) Observe that WAIT clears from display within two minutes.

Note: In very cold conditions, the battery may not immediately reach operating level (BL may not go out). If BL is still displayed after five minutes, repeat step 2. An extended warm up period may be necessary if ICAMs have been in storage 30 days or longer. Allow ICAM to run until it passes confidence test (see step 1c), but not more than 72 hours.

(i) If WAIT does not clear from display within two minutes (only H mode and A and B markers remain), refer to troubleshooting symptom 12 (TM page 2-25).

CAUTION

THE NOZZLE PROTECTIVE-CAP ASSEMBLY MUST BE STORED ON THE ENVIRONMENTAL CAP WHEN NOT ON THE FRONT OF THE ICAM. DO NOT TOUCH THE NOZZLE ASSEMBLY OR THE NEW FILTERED NOZZLE STANDOFF; TOUCHING COULD CONTAMINATE THEM. PERFORM STEPS 1, 2, AND 3 QUICKLY TO AVOID DUST OR OTHER CONTAMINATION FROM ENTERING THE ICAM.

c. Perform a confidence test.

(1) Twist the nozzle protective cap counterclockwise and remove it from the front of the ICAM. Place the nozzle protective cap on the ICAM environmental cap and twist it clockwise.

(2) Place a filtered-nozzle standoff on the ICAM nozzle assembly as follows:

(a) Pull one filtered nozzle package assembly from pocket of carrying harness.

(b) Peel back covering from top of filtered nozzle package assembly until one filtered nozzle standoff is exposed.

(c) Quickly press ICAM nozzle assembly into exposed filtered nozzle standoff and remove.

(d) Lay covering back in place across top of filtered nozzle package assembly. Slide package assembly back into pocket of carrying harness.

(3) Remove the environmental cap and nozzle protective-cap combination by twisting them counterclockwise. Install the buzzer on the electrical connector by twisting the ring clockwise.

(4) Install buzzer onto electrical connector by pushing and twisting clockwise.

Note: Make sure that the ICAM display indicates the H mode.

(5) Perform the H confidence test as follows:

(a) Remove the confidence sample from the carrying harness.

Note: The confidence sample may be different in appearance and operation depending on when it was produced but will provide the same result.

CAUTION

DO NOT ALLOW THE ICAM TO SAMPLE THE CONFIDENCE SAMPLE FOR MORE THAN 1 SECOND, BECAUSE IT WILL SATURATE THE ICAM WITH VAPOR. IT IS ONLY NECESSARY THAT AT LEAST THREE BARS SHOW FOR TEST VERIFICATION (DO NOT ATTEMPT TO HAVE ALL BARS SHOW).

(b) Grasp the confidence sample with the H end exposed.

(c) Press the ICAM nozzle assembly firmly in the H end of the confidence sample for 1 second (the confidence sample should touch the filtered-nozzle standoff).

(d) Remove the confidence sample.

(e) Verify that at least three bars are displayed after a few seconds. Three dots may appear momentarily; ignore them. If fewer than three bars appear, refer to troubleshooting symptom 8 (TM page 2-20), or if the buzzer does not sound, refer to the troubleshooting symptom 9 TM page 2-30).

(f) Display should clear to zero or one bar within 2 minutes. If ICAM does not clear to zero or one bar within two minutes, refer to the troubleshooting symptom 6 in (TM page 2-30). If the display shows five or more bars, the ICAM may need approximately 5 minutes to clear.

(g) Press the G/H mode push-button switch. Verify that the mode changes from H to G. The message WAIT may be displayed for several seconds. Proceed when the WAIT message disappears. The three dots may also appear following the mode change, but ignore them. If display flashes on and off, go to troubleshooting symptom 4 (TM page 2-31).

(6) Perform the G confidence test the same as the H confidence test, steps 1c(5)(a) through 1c(5)(f), using the G end of the confidence sample.

(7) Place the confidence sample into the pocket of the carrying harness. The ICAM is ready for operation.

Note: If the ICAM passes a self-test and a confidence test, it is ready for operation .

2. Perform operating procedures for changing modes from G to H or H to G.

Note: If an agent has been identified prior to switching modes, replace the filtered-nozzle standoff.

a. Observe the display to see which mode is shown. Press the G/H mode push-button switch. Verify that the display indicates the other mode.

b. The WAIT message will be displayed for several seconds.

c. When the WAIT message has disappeared, proceed with changing the mode.

d. Three dots may also appear following the mode change, but ignore them. If the display flashes on and off, go to the troubleshooting symptom 4 in (TM page 2-34).

e. Perform a confidence test (para 2-5d or 2-5f, step 5 or 7 as appropriate (TM page 2-34)).

f. Place confidence sample into pocket of carrying harness.

3. Perform operating procedures for general use.

Note:
CAUTIONS:
1. DO NOT CONTAMINATE THE FILTERED-NOZZLE STANDOFF BY ALLOWING IT TO COME IN CONTACT WITH A LIQUID AGENT.

2. DURING OPERATION IN VERY DUSTY CONDITIONS, FREQUENTLY INSPECT THE FILTERED NOZZLE STANDOFF FOR COLLECTION OF DUST. IF DUST IS VISIBLE, REMOVE AND REPLACE WITH A NEW FILTERED NOZZLE STANDOFF. IF POSSIBLE, PERFORM THIS ACTION AWAY FROM THE DUSTY CONDITIONS.

3. AVOID EXCESSIVE EXPOSURE TO THE SIMULANT/AGENT. AS SOON AS THE ICAM RESPONDS TO THE SIMULANT/AGENT, BACK AWAY FROM THE AGENT. SATURATING THE ICAM WITH SIMULANT/AGENT WILL ADD TO THE CLEAR-DOWN TIME AND CAUSE MAINTENANCE DOWNTIME.

4. HANDLE THE ICAM CAREFULLY. IT IS A SENSITIVE INSTRUMENT, AND IT CAN BE DAMAGED BY DROPPING IT OR BY BUMPING THE NOZZLE.

NOTES:
1. Get to know your operating environment (know the local interferents).

2. Do not obstruct the filtered nozzle standoff.

a. If the operation of the ICAM is in doubt at any time, the filtered nozzle standoff should be removed and the nozzle protective cap assembly replaced on the nozzle assembly.

(1) When the display has cleared down to zero or one bar, the nozzle protective cap assembly is removed and a new filtered nozzle standoff installed.

(2) A confidence test is performed, and monitoring can then continue.

b. When a constant number of bars are continually shown on the display, it usually indicates that contamination is present in the surrounding area or on the nozzle.

(1) Discard filtered nozzle standoff as contaminated waste.

(2) Do not allow ICAM to continuously monitor contamination of any kind.

c. Because the ICAM is a point monitor and can report conditions only at the front of the nozzle assembly, it is necessary to move the ICAM around the area when carrying out a complete reconnaissance.

Note: If there is a source of vibration in the area, the WAIT message may be displayed momentarily. Searching for an agent should cease until the WAIT message disappears.

CAUTION

DO NOT SWITCH THE ICAM OFF AT THE END OF MISSION OR FOR STORAGE IF MORE THAN ONE BAR IS DISPLAYED.

d. When monitoring for contamination on a person, object, vehicle, aircraft or piece of equipment, it is essential to first establish what general vapor hazard (G or H) is suspected. Be aware of the wind speed and direction.

e. Switch ICAM off when not in use to extend battery life.

f. In cold weather, liquid contaminants may not release sufficient vapor to produce a reading on ICAM.

WARNING

A CONTAMINATED ICAM CAN CAUSE DEATH OR INJURY TO PERSONNEL.

4. Remove the ICAM from operation.

a. If contamination is suspected, refer to decontamination procedures (TM page 2-43). If ICAM is not contaminated, proceed to step 4b.

Note: In conditions below 40°F, take the ICAM to a warm area, if possible, to carry out the shutdown procedure. When operating in wet conditions, try to avoid trapping moisture on the nozzle assembly or inside the nozzle protective-cap assembly. Water in these areas may result in an increased start-up time or reduced sensitivity.

b. Remove and discard filtered nozzle standoff from nozzle assembly.

c. Inspect nozzle assembly for indications of moisture. If droplets of water are noticed, attempt to shake off moisture.

d. Twist (counterclockwise) and remove nozzle protective cap from environmental cap.

e. Twist and install nozzle protective cap onto ICAM.

CAUTION

DO NOT SWITCH THE ICAM OFF WHEN ONE OR MORE BARS ARE SHOWING BECAUSE THIS ACTION STOPS THE PURGING OF ANY CONTAMINANT REMAINING. THIS WOULD EXTEND THE WARM-UP TIME FOR FUTURE USE.

NOTE: The ICAM normally clears to zero or one bar within 2 minutes. If the ICAM is contaminated, it may take at least 1 hour to clear to zero or one bar.

f. Remove buzzer from electrical connector and install environmental cap on electrical connector.

g. Observe display.

(1) If display shows zero or one bar, press G/H push-button switch to change modes of operation. Observe display.

(2) If display shows zero or one bar, ICAM is ready for shutdown procedure.

(3) If more than one bar shows, let ICAM run until display shows zero or one bar.

(4) Allow ICAM to run an additional five minutes after the display has cleared to zero or one bar.

(5) If ICAM fails to clear down, in either mode, within one hour, refer to troubleshooting symptom 7 (TM page 2-46)

h. Shutdown.

(1) Make sure you have completed "removing ICAM from operation" (see step 4a - g).

(2) When the display shows zero or one bar (in both modes), press ON/OFF push-button switch to shut ICAM off.

(3) Remove battery before storing ICAM in the case.

5. Prepare the ICAM for movement.

a. Remove the ICAM from operation (para 2-6f) and shut it down (para 2-6g) (TM page 2-47).

b. If carrying case is available, proceed as follows:

(1) Inspect the two filtered nozzle package assemblies in the carrying harness. If either package is empty, replace the package(s) with a new one from the lid of the carrying case assembly (para 3-5d).

(2) Inspect nozzle protective cap assembly; if cap is physically damaged, replace it with the spare nozzle protective cap assembly stored in the carrying case assembly (TM 2-47).

(3) Place ICAM into carrying case assembly.

(4) Place buzzer into carrying case assembly.

(5) Close lid on carrying case. Slide hand along hook-and-loop fastener to secure carrying case.

(6) Snap buckle halves together. ICAM is ready for movement.

6. Perform weekly PMCS

a. Perform the self-test.

b. Perform the confidence test.

c. Run the ICAM until it passes the confidence test or at least 30 minutes.

d. Run the ICAM at least 5 minutes after the bars from the confidence test clear.

(Asterisks indicates a leader performance step.)

Evaluation Preparation: Setup: Provide the Soldier with the items listed in the task condition statement. Evaluate this task during a field exercise or during normal training. Provide an area large enough to properly set up the ICAM and perform monitoring of personnel and equipment. Develop several sets of conditions for testing purposes. Use approved simulants for the ICAM to simulate contamination.

Brief Soldier: Tell the Soldier to assume the appropriate MOPP level and perform the steps necessary to put the ICAM into operation.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Prepared the ICAM for operation.			
2. Performed operating procedures for changing modes.			
3. Performed operating procedures for general use.			
4. Removed the ICAM from operation.			
5. Prepared the ICAM for movement.			
6. Performed weekly PMCS.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	TM 3-6665-343-10	OPERATORS MANUAL FOR IMPROVED CHEMICAL AGENT MONITOR (ICAM) (NSN 6665-01-357-8502) (EIC: 5AB)	Yes	No

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning.
Always be alert to ways to protect our environment during training and missions. In doing so you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects.

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Prerequisite Individual Tasks : None

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
031-627-1050	Control Contaminated Waste at a Domestic CBRNE Incident	031 - CBRN (Individual)	Approved
031-COM-1037	Detect Chemical Agents Using M8 or M9 Detector Paper	031 - CBRN (Individual)	Approved
031-627-3039	Identify Components of Chemical or Biological (CB) Dissemination Devices	031 - CBRN (Individual)	Approved

Supported Individual Tasks : None

Supported Collective Tasks :

Task Number	Title	Proponent	Status
03-5-1019	Conduct a Civil Support Team (CST) CBRNE Survey	03 - CBRN (Collective)	Approved
03-3-0001	Conduct CBRN Mounted Reconnaissance - Locate	03 - CBRN (Collective)	Approved
03-2-5126	Conduct Non-Ambulatory Casualty Decontamination	03 - CBRN (Collective)	Approved
03-6-0300	Employ CBRNE Analytical Remediation Activity (CARA)	03 - CBRN (Collective)	Approved
03-3-1030	Prepare for CBRN Reconnaissance or Survey Missions	03 - CBRN (Collective)	Approved
03-3-5129	Conduct Technical Decontamination	03 - CBRN (Collective)	Approved
03-3-5100	Perform Chemical Unit-Supported Operational Decontamination	03 - CBRN (Collective)	Approved
03-3-1011	Conduct Operational Aircraft Decontamination	03 - CBRN (Collective)	Approved
03-3-0044	Conduct CBRN Dismounted Reconnaissance - Locate	03 - CBRN (Collective)	Approved
03-2-5127	Strike Mass Casualty Decontamination Site	03 - CBRN (Collective)	Approved
03-2-9224	Conduct Operational Decontamination	03 - CBRN (Collective)	Approved
03-3-5128	Conduct Casualty Recovery in the Hot Zone	03 - CBRN (Collective)	Approved

03-3-0005	Conduct Site Characterization	03 - CBRN (Collective)	Approved
03-3-5002	Conduct Terrain Decontamination	03 - CBRN (Collective)	Approved
03-3-5127	Conduct a CBRN Survey	03 - CBRN (Collective)	Approved
03-3-0012	Conduct CBRN Dismounted Reconnaissance in a Urban Environment	03 - CBRN (Collective)	Approved
03-2-9201	Implement CBRN Protective Measures	03 - CBRN (Collective)	Approved
03-6-0065	Prepare for Operations Under CBRN Conditions	03 - CBRN (Collective)	Approved
03-2-5124	Establish Mass Casualty Decontamination Site	03 - CBRN (Collective)	Approved
03-3-1012	Conduct Thorough Aircraft Decontamination	03 - CBRN (Collective)	Approved
03-6-0071	Respond to a Chemical Agent Attack	03 - CBRN (Collective)	Approved
03-2-9225	Conduct a Chemical Reconnaissance	03 - CBRN (Collective)	Approved
03-3-5001	Conduct Fixed-Site Decontamination	03 - CBRN (Collective)	Approved
03-2-9310	Conduct a Chemical Survey	03 - CBRN (Collective)	Approved
03-3-0046	Conduct CBRN Dismounted Surveillance	03 - CBRN (Collective)	Approved
03-5-6596	Conduct CBRN Analytical Mission	03 - CBRN (Collective)	Approved
03-2-5125	Conduct Ambulatory Casualty Decontamination	03 - CBRN (Collective)	Approved
03-3-0047	Conduct CBRN Dismounted Reconnaissance - Sampling	03 - CBRN (Collective)	Approved
03-4-1020	Prepare a CBRN Information Collection Plan	03 - CBRN (Collective)	Approved
03-2-9226	Cross a Chemically Contaminated Area	03 - CBRN (Collective)	Approved
03-3-0002	Conduct CBRN Mounted Reconnaissance - Survey or Marking	03 - CBRN (Collective)	Approved
03-3-0015	Perform a CBRN Survey	03 - CBRN (Collective)	Approved
03-2-9203	React to a Chemical or Biological (CB) Attack	03 - CBRN (Collective)	Approved
03-3-5123	Perform Thorough Decontamination	03 - CBRN (Collective)	Approved

ICTL Data :

ICTL Title	Personnel Type	MOS Data
19D10 Calvary Scout, Version 1.00	Enlisted	MOS: 19D, Skill Level: SL1
MOS 74D - Chemical Operations Specialist - SL1	Enlisted	MOS: 74D, Skill Level: SL1
11A Officer Lieutenant, Version 1.00	Officer	AOC: 11A, Rank: 1LT
11B10, Infantryman - Version 1.00	Enlisted	MOS: 11B, Skill Level: SL1